

communication that includes data for the first computer], its location on the Internet being defined by either (i) a dynamic public IP address (publicly addressable), or (ii) a dynamic LAN IP address (publicly un-addressable), the personal computer being further linked to a data communication facility, the data communication facility being adapted to create and send a communication that includes the then current dynamic public IP address (publicly addressable) or dynamic LAN IP address (publicly un-addressable) of the personal computer;

(b) a [second] locator server computer linked to the Internet, [associated with a static IP address, and including a location facility for locating the first] its location on the Internet being defined by a static IP address, and including a location facility for locating the personal computer; and

(c) a remote computer linked to the Internet, the remote computer including a communication facility, the communication facility being operable to create a request for communication with the personal computer, and send the request for communication to the locator server computer;

wherein the data communication facility [enables the remote computer to connect to the second locator server computer, and to provide an identifier of the first computer to the second locator server computer so as to request communication with the first] includes data corresponding to the static IP address of the locator server computer, thereby enabling the data communication facility to create and send on an intermittent basis one or more communications to the locator server computer that include the then current dynamic public IP address or dynamic LAN IP address of the personal computer; and

wherein the [second] locator server computer [locates the first computer via its dynamic IP address communication session, and thereby enables a communication session to be set up between the first computer and the remote computer] is operable to act as an intermediary between the personal computer and the remote computer by creating one or more communication sessions there between, said one or more communication sessions being created by the location facility, in response to receipt of the request for communication with the personal computer from the remote computer, by determining the then current location of the personal computer and creating a communication channel between the remote computer and the personal computer, the location facility being operable to create such communication channel

whether the personal computer is linked to the Internet directly (with a publicly addressable) dynamic IP address or indirectly via an Internet gateway/proxy (with a publicly un-addressable dynamic LAN IP address).

28. [The system as claimed in claim 27, wherein the first computer is linked to the Internet directly or via an Internet gateway/proxy.]

29. A system as claimed in claim [1] 27, wherein the [first] personal computer is linked to [further includes] a database [linked to the data communication facility], and said system provides means for remotely accessing said database from the remote computer.

30. A system as claimed in claim [2] 29, wherein said system enables communication settings associated with the data communication facility to be set remotely for the personal computer from the remote computer.

31. A system as claimed in claim [1] 27, wherein said location facility enables the current location of the [first] personal computer to be known to the [second] locator server computer.

32. A system as claimed in claim [5] 31, wherein the location facility includes a dynamic location directory, wherein said dynamic location directory is responsive to the communication from the [first] personal computer, including data for locating and/or communicating with the [first] personal computer, to dynamically store such data to a server database linked to the [second] locator server computer.

33. A system as claimed in claim [6] 32, wherein the location facility is responsive to the request from the remote computer for communication with the [first] personal computer to retrieve the current location and port number or the current communication session associated with the [first] personal computer from the dynamic location directory, and provide said current location and port number, or the current communication session, to the personal [remote] computer.

34. A system as claimed in claim [6] 32, wherein said data communication facility creates and sends the communication including the current location or the current communication session of the [first] personal computer to the [second] locator server computer periodically.

35. A system as claimed in claim [8] 34, wherein said system further includes a security facility for restricting access to the [second] locator server computer to one or more authorized users only.

36. A system as claimed claim [9] 35, wherein said data communication facility further includes a communication interface for sending and receiving data communications.

37. A system as claimed in claim [1] 29, wherein said data communication facility interfaces with data generating facilities linked to the database and the personal computer, so as to provide remote access to data created by the data generating facilities from the remote computer.

38. A system as claimed in claim [1] 27, wherein said data communication facility further includes a private messaging and contact facility linked to the database for processing and managing messages and contact data in co-operation with said communication interface.

39. A system as claimed in claim [12] 38, wherein said private messaging and contact facility includes a unified messaging facility and a contact information facility, each being linked to the database.

40. A system as claimed in claim [13] 39, wherein said unified messaging facility enables the remote management of messages linked to the database and the personal computer from the remote computer.

41. A system as claimed in claim [14] 40, wherein said unified messaging facility enables reading, replying and managing said messages linked to the personal computer remotely from the remote computer.

42. A system as claimed in claim [15] 41, wherein said messages include e-mails, facsimiles and/or voice mails.

43. A system as claimed in claim [16] 42, wherein said unified messaging facility includes an e-mail message facility.

44. A system as claimed in claim [17] 43, wherein said unified messaging facility further includes a fax message management facility.

45. A system as claimed in claim [18] 44, wherein said unified messaging facility further includes a voice message facility.

46. A system for providing access to a [first] personal computer from a remote computer, the [first] personal computer [is] being linked to the Internet [and associated with a dynamic IP address, the first computer being further linked to a data communication facility], the location of the personal computer on the Internet being defined by either (i) a dynamic public IP address (publicly addressable), or (ii) a dynamic LAN IP address (publicly un-addressable), the personal computer being

further linked to a data communication facility, the data communication facility being adapted to create and send a communication that includes the then current dynamic public IP address (publicly addressable) or dynamic LAN IP address (publicly un-addressable) of the personal computer, the system comprising:

(a) a locator server computer linked to the Internet, [associated with a static IP address] its location on the Internet being defined by a static IP address, and including a location facility for locating the personal computer;

wherein the [locator server computer is responsive to a request for communication from the remote computer so as to enable the remote computer to connect to the locator server computer, and to provide an identifier of the first computer] remote computer is also linked to the Internet, the remote computer including a communication facility, the communication facility being adapted to create a request for communication with the personal computer, and send the request for communication to the locator server computer;

[and] wherein, [in response, the location facility locates the first computer via its dynamic IP address communication session, and thereby enables a communication session to be set up between the first computer and the remote computer] the data communication facility is operable to access data corresponding to the static IP address of the locator server computer, thereby enabling the data communication facility to create and send on an intermittent basis one or more communications to the locator server computer that include the then current dynamic public IP address or dynamic LAN IP address of the personal computer; and

wherein the locator server computer is operable to act as an intermediary between the personal computer and the remote computer by creating one or more communication sessions there between, said one or more communication sessions being created by the location facility, in response to receipt of the request for communication with the personal computer from the remote computer, by determining the then current location of the personal computer and creating a communication channel between the remote computer and the personal computer, the location facility being operable to create such communication channel whether the personal computer is linked to the

Internet directly with a (publicly addressable) dynamic IP address or indirectly via an Internet gateway/proxy (with a publicly un-addressable dynamic LAN IP address).

47. A method of providing access to a [first] personal computer [linked to the Internet and associated with a dynamic IP address from a remote computer] from a remote computer, the personal computer being linked to the Internet, its location on the Internet being defined by either (i) a dynamic public IP address (publicly addressable), or (ii) a dynamic LAN IP address (publicly un-addressable), the method comprising the steps of:

(a) [registering the first computer with a locator server computer, the locator server computer being linked to the Internet, associated with a static IP address, and including a location facility for locating the first computer] providing a data communication facility on the personal computer, the data communication facility being adapted to create and send a communication that includes the then current dynamic public IP address (publicly addressable) or dynamic LAN IP address (publicly un-addressable) of the personal computer;

(b) [connecting from the remote computer to the locator server computer, thereby requesting communication with the first computer from the remote computer;] by operation of the data communication facility:

(i) obtaining the static IP address for a locator server computer, that includes a location facility for locating the personal computer;

(ii) sending the communication that includes the then current dynamic public IP address (publicly addressable) or dynamic LAN IP address (publicly un-addressable) of the personal computer to the locator server computer;

(c) [the locator server computer, in response, locating the first computer via its dynamic IP address communication session] receiving a request from the remote computer at the locator server computer to communicate with the personal computer;

(d) [the locator server computer thereby setting up a communication session between the first computer and the remote computer] in response to the request, the locator server computer acting as an intermediary between the personal computer and the remote computer by creating one or more communication sessions there between, said one or more communication sessions being created by the location facility, in response to receipt of the request for communication with the personal

computer from the remote computer, by determining the then current location of the personal computer and creating a communication channel between the remote computer and the personal computer, the location facility being operable to create such communication channel whether the personal computer is linked to the Internet directly with a (publicly addressable) dynamic IP address or indirectly via an Internet gateway/proxy (with a publicly un-addressable dynamic LAN IP address).

48. The method claimed in claim [21] 47, further comprising the step of the locator server computer storing the current location of the [first] personal computer into a directory linked to the location facility, the current location being obtained from a communication sent by the [first] personal computer to the locator server computer.

49. A computer readable memory having recorded thereon statements and instructions for execution by a computer to carry out the method of claim [21] 47.

50. A computer program product for use on a server computer linked to the Internet and having a static IP address, for [enabling] providing access to a [first] personal computer [linked to the Internet and having a dynamic IP address from a remote computer] from a remote computer, the personal computer being linked to the Internet, its location on the Internet being defined by either (i) a dynamic public IP address (publicly addressable), or (ii) a dynamic LAN IP address (publicly un-addressable), the computer program product comprising:

- (a) a computer usable medium;
- (b) computer readable program code recorded or storable in the computer useable medium, the computer readable program code defining a server computer program on the server computer wherein:

- (i) the server computer program is [adapted] operable to enable a connection between the remote computer and the server computer; and

- (ii) the server computer program includes a location facility and is responsive to a request from the remote computer to communicate with the [first] personal computer [so as to locate the first computer via its dynamic IP address communication session thereby setting up a communication session between the first computer and the remote computer.] to act as an intermediary between the personal computer and the remote computer by creating one or more communication sessions there between, said one or more communication sessions being created by the location facility, in response to receipt of the

request for communication with the personal computer from the remote computer, by determining the then current location of the personal computer and creating a communication channel between the remote computer and the personal computer, the location facility being operable to create such communication channel whether the personal computer is linked to the Internet directly (with a publicly addressable) dynamic IP address or indirectly via an Internet gateway/proxy (with a publicly un-addressable dynamic LAN IP address).

51. The computer program product claimed in claim [24] 50, wherein the location facility is responsive to a communication from the [first] personal computer including its current location to store the current location to a storage medium linked to the server computer.

52. A computer program product for use on a [first] personal computer [linked to the Internet and having a dynamic IP address, for enabling access to the first computer from a remote computer, via a local server computer linked to the Internet and having a static IP address] for providing access to the personal computer from a remote computer, the personal computer being linked to the Internet, its location on the Internet being defined by either (i) a dynamic public IP address (publicly addressable), or (ii) a dynamic LAN IP address (publicly un-addressable), the computer program product comprising:

- (a) a computer usable medium;
- (b) computer readable program code recorded or storable in the computer useable medium, the computer readable program code defining a data communication program on the [first] personal computer wherein:

- (i) the data communication program is [adapted] operable to send a communication to [the] a locator server computer [that includes data for locating the first], wherein the locator server computer is linked to a location facility and includes data for locating the personal computer; and

- (ii) the data communication program is [adapted] operable to communicate with the remote computer [by means of a communication session created by the locator server computer between the first computer and the remote computer], the locator server computer acting as an intermediary between the personal computer and the remote computer by creating one or more communication sessions there between, said one or more communication

sessions being created by the location facility, in response to receipt of a request for communication with the personal computer from the remote computer, by determining the then current location of the personal computer and creating a communication channel between the remote computer and the personal computer, the location facility being operable to create such communication channel whether the personal computer is linked to the Internet directly (with a publicly addressable) dynamic IP address or indirectly via an Internet gateway/proxy (with a publicly un-addressable dynamic LAN IP address).

53. The computer program product as claimed in claim [26] 52, wherein the [first] personal computer is linked to the Internet directly or indirectly via an Internet gateway/proxy.

54. A computer program product as claimed in claim [27] 53, wherein the [first] personal computer is linked to [further includes] a database linked to the data communication program, and said system provides means for remotely accessing said database linked to the personal computer from the remote computer.

55. A computer program product as claimed in claim [28] 54, wherein said data communication program enables communication settings associated with the data communication program to be set remotely from the remote computer for the personal computer.

56. A computer program product as claimed in claim [29] 55, wherein said data communication program enables the current location of the [first] personal computer to be known to the [second] locator server computer.

57. A computer program product as claimed in claim [30] 56, wherein said data communication program creates and sends the communication including the current location or the current communication session of the [first] personal computer to the [second] locator server computer periodically.

58. A computer program product as claimed claim [31] 57, wherein said data communication program further includes, or is linked to, a communication interface for sending and receiving data communications.

59. A computer program product as claimed in claim [32] 58, wherein said data communication program interfaces with data generating facilities linked to the database, so as to provide remote access to data created by the data generating facilities linked to the personal computer from the remote computer.

60. A computer program product as claimed in claim [33] 59, wherein said data communication program further includes a private messaging and contact facility linked to the database for processing and managing messages and contact data in co-operation with said communication interface.

61. A computer program product as claimed in claim [34] 60, wherein said private messaging and contact facility includes a unified messaging facility and a contact information facility, each being linked to the database.

62. A computer program product as claimed in claim [35] 61, wherein said data communication program further includes, or is linked to, a remote message management facility linked to the database.

63. A computer program product as claimed in claim [61] 62, wherein said unified messaging facility enables reading, replying and managing said messages linked to the personal computer remotely from the remote computer.

64. A computer program product as claimed in claim [37] 63, wherein said messages include e-mails, facsimiles and/or voice mails.

65. A computer program product as claimed in claim [38] 64, wherein said unified messaging facility includes an e-mail message facility.

66. A computer program product as claimed in claim [39] 65, wherein said unified messaging facility further includes a fax message management facility.

67. A computer program product as claimed in claim [41] 66, wherein said unified messaging facility further includes a voice message facility.

68. [A computer program product for enabling enables access to a first computer linked to the Internet and having a dynamic IP address from a remote computer, the computer program product being for use on the remote computer, the computer program product comprising:

(a) a computer usable medium;

(b) computer readable program code recorded or storable in the computer useable medium, the computer readable program code defining a data communication program on the first computer:

(i) the data communication program defines or is linked to a browser facility operable on the remote computer, and adapted to send a request to a second locator server computer for communication with the first computer;

(ii) the data communication is adapted to respond to the second locator server computer locating the first computer by engaging in a communication session between the remote computer and the first computer, the communication session being established by operation of a location facility linked to the second locator server computer.]

NEW CLAIMS

69. The system claimed in claim 27, wherein once the communication channel is created between the remote computer and the personal computer, the personal computer is operable to receive and act on commands from the remote computer for remote control and/or remote access of the personal computer from the remote computer.

70. The system as claimed in claim 46, wherein once the communication channel is created between the remote computer and the personal computer, the personal computer is operable to receive and act on commands from the remote computer for remote control and/or remote access of the personal computer from the remote computer.

71. The method claimed in claim 47, further comprising the step of the personal computer receiving and acting on commands from the remote computer for remote control and/or remote access of the personal computer from the remote computer.

72. The computer program product claimed in claim 50, wherein by operation of the location facility the personal computer is operable to receive and act on commands from the remote computer for remote control and/or remote access of the personal computer from the remote computer.

73. The computer program product claimed in claim 72, wherein by operation of the location facility the personal computer is operable to receive commands from the remote computer for remote control and/or remote access of the personal computer from the remote computer.

Reasons for Amendments

Claims 27, 46, 47, 50, 52 have been amended to clarify the claimed subject matter, and also make it very clear that the invention does not relate to dynamic DNS technology (please see below).

Claim 28 is cancelled because the subject matter thereof is already included in Claim 27.

Changes have been made to Claims 29-45, 48-49, 50, 53-67 to correct numbering problems.

Further amendments have been made to the various claims for consistency of the various claims regarding the elements "personal computer" and "locator server computer". Further amendments have been made to Claims 37, 40-41 and 59 to clarify the relationship of the "personal computer" and the "remote computer".

New Claims 69-73 have been added, which are dependent claims. These claims have been added to express in another way the interoperation of the "personal computer" and "remote computer".

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A telephone interview was requested by Agent for Applicant. No "Applicant Initiated Interview Summary Form" was completed.

The interview occurred on April 15, 2004, by telephone at 2:00 p.m. EST.

The following individuals participated: (a) Andrew Cheung (one of the inventors), (b) Anthony de Fazekas (Agent for Applicant) and Examiner Majid A. Banankhah. The Borsato reference and application of DNS technology to the invention was discussed.

Comments

Examiner's latest action cited Borsato as anticipating the Claims of the Application. Borsato relates to dynamic DNS (i.e. Domain Name Service). The purpose of dynamic DNS technology is of course to dynamically assign IP addresses for the purpose of managing IP addressing in a computer network. The result is the

assignment of an IP address to a client thereby enabling the client to log on to the network. Borsato relates to a very specific DNS architecture for this purpose.

The present invention (as has been claimed all along) relates to a completely different architecture whereby there is a "personal computer" with a dynamic IP address, and a "remote computer" that seeks to communicate with the "personal computer". A "locator server computer" acts as the man-in-the-middle. The "personal computer" communicates from time to time its then current location which is stored to the "locator server computer". The "locator server computer" is responsive to a request for communication with the "personal computer" from the "remote computer" to look up the then current IP address of the "personal computer" and create a "communication channel" between the "personal computer" and the "remote computer".

This is, of course, a completely different architecture from DNS, and provides a function that is also completely different from DNS technology. On this point alone, the Claims are clearly allowable. Borsato does not contemplate this problem, or offer the claimed solution, or one that would have been obvious to a person skilled in the art to modify to provide the claimed invention.

The Claims have been amended nonetheless, in an attempt to specifically identify functions of the invention that would clearly not be supported by DNS technology. This is notwithstanding the obvious difference between the claimed invention and dynamic DNS, as explained above. For example, the "personal computer" can be linked to a "dynamic public IP address (publicly addressable) or (ii) a dynamic LAN IP address (publicly un-addressable); the location facility is operable to create the communication channel whether "the personal computer is linked to the Internet directly (with a publicly addressable) dynamic IP address or indirectly via an Internet gateway/proxy (with a publicly un-addressable dynamic LAN IP address)". These amendments serve to further underline the **irrelevance** of the DNS reference as it clearly cannot be said to read on the Amended Claims, as dynamic DNS does not support the claimed functions.